STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 118906

TO: Devesh Khare
Location: REM-5C335/5C18
Art Unit: 1623
Monday, April 12, 2004

Case Serial Number: 10/601912

From: Mary Jane Ruhl
Location: Biotech-Chem Library
Remsen 1-B55
Phone: 571-272-2524

maryjane.ruhl@uspto.gov

Search Notes

Examiner Khare,

Here are the results for your recent search request.

Please feel free to contact me if you have any questions about these results.

Thank you for using STIC services. We appreciate the opportunity to serve you.

Sincerely,

Mary Jane Ruhl
Technical Information Specialist
STIC
CM-1, Rm. 6-A-06
605-1155

STIC SEARCH RESULTS FEEDBACK FORM

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Biotech-Chem Library

Questions about the scope or the results of the search? Contact ***the searcher or contact:***

Mary Hale, Information Branch Supervisor
571-272-2507 Remsen E01 D86

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1610*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

  Types of relevant prior art found:
  - ☐ Foreign Patent(s)
  - ☐ Non-Patent Literature
    (journal articles, conference proceedings, new product announcements etc.)
- *Relevant prior art **not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/Biotech-Chem Library Remsen Bldg.

sira
Search and Information Resources Administration

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     FILE 'REGISTRY' ENTERED AT 11:53:09 ON 12 APR 2004
                  E DEXTROSE/CN
L1                1 SEA ABB=ON  DEXTROSE/CN
                  E MALTO-OLIGOSACCHARIDE/CN
                  E SORBITOL/CN
L2                1 SEA ABB=ON  SORBITOL/CN
                  E MALTOSE/CN
L3                2 SEA ABB=ON  MALTOSE/CN
                  E DEXTROSE/CN
L4                1 SEA ABB=ON  "DEXTROSE MONOHYDRATE"/CN
L5                2 SEA ABB=ON  L1 OR L4

     FILE 'HCAPLUS' ENTERED AT 11:54:31 ON 12 APR 2004
L6              897 SEA ABB=ON  ?SACCHAR?(W)?DERIV?(3A)?OLIGOSACCHARID?
L7                0 SEA ABB=ON  L6 AND ?EXTRUSION?(W)?REACT?
L8                1 SEA ABB=ON  L6 AND ?EXTRUSION? - inventor's
L9             1823 SEA ABB=ON  ?MALTO?(W)?OLIGOSACCH? OR ?MALTOOLIGOSACCH?
L10              90 SEA ABB=ON  L6 AND L9
L11              52 SEA ABB=ON  L10 AND (L5 OR L3 OR ?DEXTROSE? OR ?MALTOSE?)
L12               1 SEA ABB=ON  L11 AND (?HYDROGEN?(W)?STARCH?(W)?HYDROLYZ? OR L2
                  OR ?SORBITOL?) - inventors
L13              13 SEA ABB=ON  L11 AND ?MIXT?
L14               1 SEA ABB=ON  L11 AND ?POLYMERIZ?(3A)?DEGREE?
L15              14 SEA ABB=ON  L12 OR L13 OR L14  14 cits from CA Plus

     FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO, AGRICOLA, CABA,
     CROPB, CROPR, CROPU, FSTA, FROSTI, LIFESCI' ENTERED AT 12:01:16 ON 12 APR
     2004
L16               2 SEA ABB=ON  L14
L17               5 SEA ABB=ON  L15
L18               5 SEA ABB=ON  L16 OR L17
L19               5 DUP REMOV L18 (0 DUPLICATES REMOVED)  5 cits from other d.b.'s
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I hope you'll find something useful in these results. Your request was truncated at claim 7 + I couldn't locate claims via elan, so I'm not sure if there were additional claims. Pls. call me if you need additional work on this search.

Thank you,
Mary Jane Ruhl
X 22524

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=> d que stat l15
L1             1 SEA FILE=REGISTRY ABB=ON  DEXTROSE/CN
L2             1 SEA FILE=REGISTRY ABB=ON  SORBITOL/CN
L3             2 SEA FILE=REGISTRY ABB=ON  MALTOSE/CN
L4             1 SEA FILE=REGISTRY ABB=ON  "DEXTROSE MONOHYDRATE"/CN
L5             2 SEA FILE=REGISTRY ABB=ON  L1 OR L4
L6           897 SEA FILE=HCAPLUS ABB=ON   ?SACCHAR?(W)?DERIV?(3A)?OLIGOSACCHARID
                 ?
L9          1823 SEA FILE=HCAPLUS ABB=ON   ?MALTO?(W)?OLIGOSACCH? OR ?MALTOOLIGOS
                 ACCH?
L10           90 SEA FILE=HCAPLUS ABB=ON   L6 AND L9
L11           52 SEA FILE=HCAPLUS ABB=ON   L10 AND (L5 OR L3 OR ?DEXTROSE? OR
                 ?MALTOSE?)
L12            1 SEA FILE=HCAPLUS ABB=ON   L11 AND (?HYDROGEN?(W)?STARCH?(W)?HYDR
                 OLYZ? OR L2 OR ?SORBITOL?)
L13           13 SEA FILE=HCAPLUS ABB=ON   L11 AND ?MIXT?
L14            1 SEA FILE=HCAPLUS ABB=ON   L11 AND ?POLYMERIZ?(3A)?DEGREE?
L15           14 SEA FILE=HCAPLUS ABB=ON   L12 OR L13 OR L14

=> d ibib abs l15 1-14

L15  ANSWER 1 OF 14  HCAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         2004:2900  HCAPLUS
DOCUMENT NUMBER:          140:58735
TITLE:                    Dextrinized, saccharide-derivatized
                          oligosaccharides as bulking agents and energy
                          slow-release agents for food and feed use.
INVENTOR(S):              Antrim, Richard L.; Barresi, Frank W.; Mcpherson,
                          Roger E.; Wang, Jiao
PATENT ASSIGNEE(S):       Grain Processing Corporation, USA
SOURCE:                   PCT Int. Appl., 30 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.   DATE
     ---------------   ----  --------       ---------------   --------
     WO 2004000860      A2   20031231       WO 2003-US19810   20030623
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR,
             TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG,
             KZ, MD, RU, TJ
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
             CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
             NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
             GW, ML, MR, NE, SN, TD, TG
     US 2004053886      A1   20040318       US 2003-601912    20030623
PRIORITY APPLN. INFO.:                   US 2002-390570P  P  20020621
AB   Disclosed are saccharide-derivatized
     oligosaccharides. The derivatized oligosaccharides preferably are
     prepared by extruding a maltooligosaccharide mixture with
     a saccharide or mixture of saccharides having a DP ranging from 1
     to 4. The products are low in digestibility, and thus in various
     embodiments are suitable for use as bulking agents, for controlled energy
     release products, and for other purposes.
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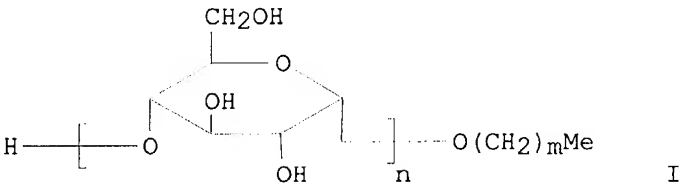
L15 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:897008 HCAPLUS
DOCUMENT NUMBER: 123:322116
TITLE: Topical skin preparations containing alkyl oligomaltosides as solubilizers for hydrophobic ingredients
INVENTOR(S): Endo, Masayuki; Hatsutori, Takao
PATENT ASSIGNEE(S): Pola Kasei Kogyo Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07228525	A2	19950829	JP 1994-21174	19940218

PRIORITY APPLN. INFO.: JP 1994-21174 19940218
OTHER SOURCE(S): MARPAT 123:322116
GI



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AB The topical prepns. comprise aqueous carriers and hydrophobic ingredients solubilized in the carriers and contain **maltooligosaccharides derivs.** I (n = 3-10; m = 11-20). The hydrophobic ingredients may be inflammation inhibitors. I solubilize hydrophilic substances in aqueous carriers and generate no HCHO upon standing. Maltotriose (25 g) was gradually added to a **mixture** of Ac2O and pyridine at 0° and the reaction **mixture** was further stirred at room temperature for a day to give 38.2 g acetylmaltotriose (II). A ethylene dichloride solution of stearyl alc. was added dropwise to a **mixture** of II, ethylene dichloride, and SnCl4 and the reaction **mixture** was further stirred for a day to give 10.9 g stearyl decaacetylmaltotrioside, which in MeOH was treated with MeONa under stirring at room temperature for a day to give 6.2 g I (n = 3, m = 17) (III). An aqueous solution of III (1 weight%) was stored at 40° for 1 mo to generate no HCHO, 43 ppm from polyoxyethylene hydrogenated castor oil. III was not irritating to a shaven part on the back of a guinea pig. A **mixture** of prednisolone 0.1, propylene glycol 5.0, methylparaben 0.2, H2O 92.7, and III 2.0 weight% was heated at 80° to melt and then cooled to give a topical preparation in which prednisolone was solubilized.

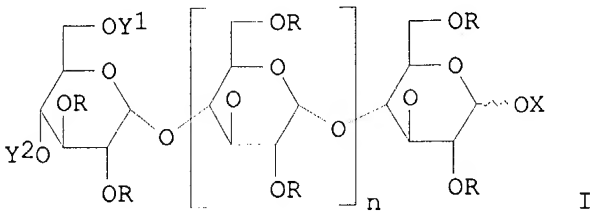
L15 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:865464 HCAPLUS
DOCUMENT NUMBER: 124:50023
TITLE: Separation and detection of 4-hexadecylaniline **maltooligosaccharide derivatives**

with packed capillary liquid chromatography-frit fast atom bombardment-mass spectrometry
AUTHOR(S): Johansson, Lena; Karlsson, Hasse; Karlsson, Karl-Anders
CORPORATE SOURCE: Department of Medical Biochemistry, University of Goeteborg, Medicinaregatan 9A, Goteborg, S-413 90, Swed.
SOURCE: Journal of Chromatography, A (1995), 712(1), 149-54
CODEN: JCRAEY; ISSN: 0021-9673
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A LC-MS method is under development for the separation and detection of **mixts.** of native glycolipids and of **oligosaccharide derivs.** The LC system is based on slurry-packed capillary columns. Frit fast atom bombardment (frit-FAB) was used as the LC-MS interface and ionization technique and the column is connected to the frit via a 50 μm I.D. fused-silica capillary liner. Post column addition of matrix is achieved using a 50 μm I.D. fused-silica capillary liner with 2.5% (volume/volume) matrix solution The two liners are joined through a septum and end side by side against the frit. The detection limit is <1 pmole in the neg. ion mode. A **mixture** of tetra to deca **maltooligosaccharides** reductively aminated with 4-hexadecylaniline (M4-10-HDA) was separated on a straight phase silica column using gradient elution.

L15 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1994:324132 HCAPLUS
DOCUMENT NUMBER: 120:324132
TITLE: Preparation of 6-alkoxymethoxy **maltooligosaccharide derivative,** reagents containing the derivative as active ingredient for determination of α-amylase activity, and method for determination of α-amylase activity
INVENTOR(S): Tokutake, Shoichi; Tomikura, Tadashi; Kotani, Kazuo; Saito, Kazunori; Tobe, Koichiro
PATENT ASSIGNEE(S): Kikkoman Corp, Japan; Daiichi Kagaku Yakuhin Kk; Seishin Seiyaku Kk
SOURCE: Jpn. Kokai Tokkyo Koho, 22 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06056869	A2	19940301	JP 1991-180465	19910626

PRIORITY APPLN. INFO.: JP 1991-180465 19910626
OTHER SOURCE(S): MARPAT 120:324132
GI



I

AB 6-O-(alkoxymethyl)**maltooligosaccharide derivs.** [I; R = H; n = 2-6; X = aromatic chromophore; Y1 = CHR1OR2, CHR1SR2; Y3 = CHR3OR4, CHR3SR4; R1, R3 = H, (un)substituted hydrocarbyl; R2, R4 = (un)substituted hydrocarbyl; or R1 and R2 or R3 and R4 are bonded together to form an alkylene] are prepared A reagent for determination of α-amylase activity contains the **maltooligosaccharide derivative** I as the active ingredient. The α-amylase activity is determined by (1) adding the α-anomer of **maltooligosaccharide derivative** I, α-glucosidase, and/or glucoamylase or (2) adding the β-anomer or a **mixture** of α- and β-anomers of the **maltooligosaccharide derivative** I, α-glucosidase and/or glucoamylase, and β-glucosidase to a α-amylase-containing sample, carrying out the enzymic reaction, and determination of the aromatic chromophore compound released. The **maltooligosaccharide derivative** I is not readily decomposed, stable for a long period of time, hydrolyzed substantially at one position by α-amylase and at the same positions by isoenzymes with same hydrolysis ratio, and shows good hydrolysis rate and water solubility Using this substrate I, the α-amylase activity is efficiently determined with good accuracy in a short time without the influence from other components (e.g glucose, **maltose**, bilirubin, and Hb) in a sample. Thus, 2-chloro-4-nitrophenyl β-D-maltopentaoside (II) was stirred with C(OMe)4 in the presence of Amberlyst 15E at 35° for 4 h to give orthoester β-I [R = H, n = 3, X = 2-chloro-4-nitrophenyl, Y1Y2 = (MeO)2C] which was acetylated by Ac2O in pyridine and then deprotected with AcOH to give acetate β-I (R = Ac, n = 3, X = 2-chloro-4-nitrophenyl, Y1 = Y2 = H). The latter compound was alkylated by MeOCH2CH2OCH2Cl in MeCN containing Et3N under reflux followed by deacetylation with aqueous NH3 in MeOH to give β-I (R = H, n = 3, X = 2-chloro-4-nitrophenyl, Y1 = Y2 = MeOCH2CH2OCH2) (III). III was hydrolyzed by human saliva-derived α-amylase at hydrolysis rate equivalent to that of maltopentaoside II to give 98% 2-chloro-4-nitrophenyl D-maltoside and 2% 2-chloro-4-nitrophenyl D-glucopyranoside.

L15 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1993:493731 HCAPLUS
DOCUMENT NUMBER: 119:93731
TITLE: Manufacture of **maltooligosaccharide derivatives** with amylase
INVENTOR(S): Usui, Taichi; Nakakuki, Teruo; Sakai, Kazuo
PATENT ASSIGNEE(S): Nihon Shokuhin Kako Co., Ltd., Japan; Yaizu Suisan Kagaku Koygo Co., Ltd.
SOURCE: U.S., 5 pp. Cont. of U.S. Ser. No. 568,525, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5208151	A	19930504	US 1990-607612	19901031
PRIORITY APPLN. INFO.:			US 1988-234019	19880818
			US 1989-434516	19891114
			US 1990-568525	19900814

AB Highly purified **maltooligosaccharide derivs.** can be produced in high yield by reacting, in a **mixture** of hydrophilic organic solvent and water, a **mixture** of **maltooligosaccharide**, or a substance capable of being converted into the **maltooligosaccharide** upon reaction with an amylase, and an O-glycosyl derivative, with the amylase. Thus, maltopentaose and 4-nitrophenyl-β-D-glucoside in 1:1 15 mM acetate buffer and MeOH were incubated at 30° for 48 h with maltotetraose-producing amylase from Pseudomonas stutzeri. The product 4-nitrophenyl-β-D-maltopentaoside was produced in 32.7% yield and 99.2% purity by gel permeation column chromatog.

L15 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1993:60043 HCAPLUS
DOCUMENT NUMBER: 118:60043
TITLE: Preparation of **galactosylmaltooligosaccharide** phenyl glycoside derivatives and method for fractional analysis of human pancreas- and saliva-type α-amylase using them
INVENTOR(S): Usui, Yasuichi; Ogawa, Koichi; Nakakuki, Teruo
PATENT ASSIGNEE(S): Nippon Shokuhin Kako K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04193892	A2	19920713	JP 1990-324191	19901127
JP 3055931	B2	20000626		
PRIORITY APPLN. INFO.:			JP 1990-324191	19901127

OTHER SOURCE(S): MARPAT 118:60043

AB The title glycosides [I; R = (un)substituted Ph; R1 = Q; n = 2-5], are prepared by transglycosidation of **maltooligosaccharide derivative** I (R and n = same as above; R1 = H) with a galactosyl residue-containing sugar in the presence of β-galactosidase. The fractional anal. of human pancreas- and saliva-type α-amylase involves reacting a sample containing the α-amylases with the substrates I and measuring the production ratio of a few **malto-oligosaccharide derivs.** formed. Thus, 1.89 g lactose, 1.70 g p-nitrophenyl α-maltopentoside (II), 3 mg β-galactosidase (Biolacta; Yamato Kasei Inc.), and 6 mL 50 mM phosphate buffer (pH 7.0) was left to stand at 40° for 86 h, thereto 6 mL 0.1 M phosphate buffer was added, and the **mixture** was allowed to react at 40° for 30 h to selectively hydrolyze the regioisomer (III) in which the galactosyl residue is bonded to II through the β-1,4 bond, and purified by a column packed with Toyopearl HW-40S gel to give 150 mg powder containing a 1:9 ratio of III and β-I (R = C6H4NO2-p, R1 = Q, n = 3) (IV) which was further purified by a ODS column to give pure IV. When IV was incubated with both human pancreas- and saliva-type α-amylase in a 0.1 M 3,3-dimethylglutaric acid-5 M NaOH

buffer containing CaCl2, the production ratio of p-nitrophenyl α-glucoside/p-nitrophenyl α-maltoside showed a linear relationship to the ratio of human pancreas-type amylase/ saliva-type α-amylase present. Thus the activity of each enzyme can be calculated from the mol. production ratio of p-nitrophenyl α-glucoside/p-nitrophenyl α-maltoside, thus the enzyme ratio, and the total activity of both enzymes.

L15 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1993:55635 HCAPLUS
DOCUMENT NUMBER: 118:55635
TITLE: Substrate for differentiating isozymes of β-amylase
INVENTOR(S): Tokutake, Shoichi; Yamatsugu, Nobuyuki; Kotani, Kazuo; Saito, Kazunori; Tobe, Koichiro
PATENT ASSIGNEE(S): Kikkoman Corp., Japan; Daiichi Kagaku Yakuhin K. K.; Seishin Seiyaku K. K.
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04229196	A2	19920818	JP 1990-415253	19901227
JP 2752523	B2	19980518		

PRIORITY APPLN. INFO.: JP 1990-415253 19901227
OTHER SOURCE(S): MARPAT 118:55635
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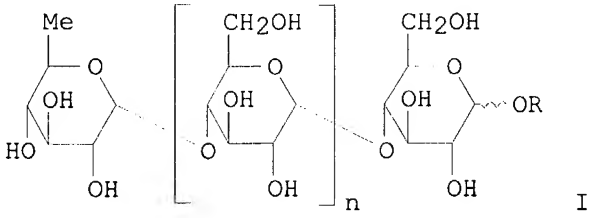


I

AB 6-**Deoxymaltooligosaccharide derivs**. I (R=H or chromogenic aromatic group, n=2-6) are prepared as substrate for kinetically differentiating isoenzymes of β-amylase. DOG5-CNP (2-chloro-4-nitrophenyl-65-deoxy-β-D-maltopentaoside) and DOG7-CNP (2-chloro-4-nitrophenyl-65-deoxy-β-D-maltoheptaoside) were prepared , the Km's for pancreatic (P-) and saliva (S-) type β-amylase were determined, and equations for analyzing **mixture** of P- and S-type isoenzyme were provided.

L15 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1992:55098 HCAPLUS
DOCUMENT NUMBER: 116:55098
TITLE: Reagent compositions for enzymic-spectrometric determination of chloride ion in serum

INVENTOR(S): Mizuguchi, Katsuhiko; Tejima, Shinichi; Hanyu, Tsuneo
PATENT ASSIGNEE(S): Toyobo Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03176000	A2	19910731	JP 1990-194282	19900723
JP 2990753	B2	19991213		
US 5470715	A	19951128	US 1994-176707	19940103

PRIORITY APPLN. INFO.: JP 1989-244343 19890919
JP 1990-194282 19900723
JP 1990-212933 19900810
US 1991-733449 19910722

AB The title reagent composition consists of **maltooligosaccharide derivs.** having (un)modified nonreducing and modified reducing terminals, metal chelators, α-amylase, and α-glucosidase, β-glucosidase and/or glucoamylase. The reagent composition has a lowered blank value and the method is simple and dets. a wide range of Cl- concns. Thus, Cl- in serum was treated with reagent 1 containing pH 7.0 phosphate buffer, EDTA, α-amylase, α-glucosidase, and β-glucosidase at 37° for 5 min and then with reagent 2 containing pH 7.0 phosphate buffer, EDTA and 2-chloro-4-nitrophenyl-β-D-maltoheptaoside. The reaction **mixture** was measured at 400 nm for Cl- determination

L15 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1991:431502 HCAPLUS
DOCUMENT NUMBER: 115:31502
TITLE: **Cyclomalto-oligosaccharide derivatives** and processes for their preparation
INVENTOR(S): Darcy, Raphael; Defaye, Jacques; Gadelle, Andree; Guillet, Alain; O'Sullivan, Thomas
PATENT ASSIGNEE(S): Commissariat a l'Energie Atomique, Fr.; University College Dublin
SOURCE: Eur. Pat. Appl., 23 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 403366	A2	19901219	EP 1990-401620	19900612
EP 403366	A3	19910508		
EP 403366	B1	19950222		
R: BE, DE, GB, IT				
FR 2648464	A1	19901221	FR 1989-7876	19890614
FR 2648464	B1	19910830		

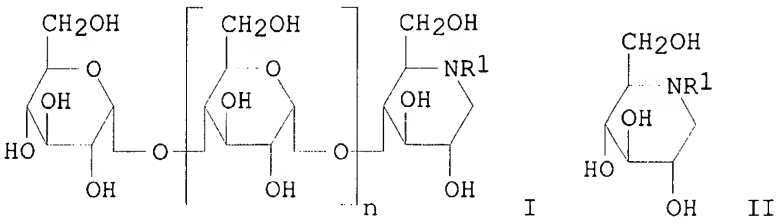
PRIORITY APPLN. INFO.: FR 1989-7876 19890614
OTHER SOURCE(S): MARPAT 115:31502
AB The title products, with rings containing 4-11 **maltose** units and bearing mono- or oligosaccharide groups bonded by S atoms and, optionally, thiohydrocarbon chains, are prepared from **cyclomaltooligosaccharide** sulfonate esters and thiomonosaccharides or thiooligosaccharides. Leaving

a **mixture** of 3.9 mL 1M NaOMe and 1.3 g 2,3,4,6-tetra-O-acetyl-1-S-acetyl-1-thio-α-D-glucopyranose in 27 mL MeOH at ambient temperature for 12 h, concentrating in vacuo, dissolving the residue in 1,3-dimethyl-2-oxo-hexahydropyrimidinone, heating with 2.08 g 6-O-p-toluenesulfonylcyclomaltoheptaose at 70° for 3 h, and purification by chromatog. gave 1.4 g 6-S-α-D-glucopyranosyl-6-thiocyclomaltoheptaose, which formed H2O-soluble inclusion complexes with 2-naphthol, hydrocortisone, and Tolnaftate.

L15 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1991:80076 HCAPLUS
DOCUMENT NUMBER: 114:80076
TITLE: Manufacture of moranoline oligosaccharides with amylase
INVENTOR(S): Usui, Yasuichi; Ezure, Yoji; Uejima, Osamu
PATENT ASSIGNEE(S): Nippon Shinyaku Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02215394	A2	19900828	JP 1989-34246	19890214

PRIORITY APPLN. INFO.: JP 1989-34246 19890214
OTHER SOURCE(S): MARPAT 114:80076
GI



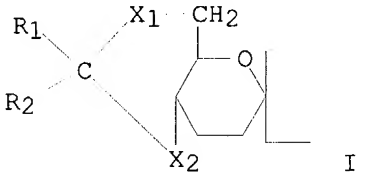
AB Moranoline oligosaccharides I (R1 = H, lower alkyl; n = 0-20) are manufd.from moranoline II (R1 = same as I) by incubation with **maltooligosaccharides** or compds., which can be converted into **maltooligosaccharides** with amylase, in **mixts.** of hydrophilic solvents and H2O in presence of amylase to manufacture moranoline oligosaccharides with n = 0-20, useful for the treatment of diabetes mellitus. Maltotriose (400 mg) and 200 mg moranoline in DMSO-phosphate buffer was treated with maltotriose-producing amylase from Streptomyces griseus at 40° for 80 h to produce 50 mg maltotriosylmoranoline.

L15 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1990:94594 HCAPLUS
DOCUMENT NUMBER: 112:94594
TITLE: Differential quantition of amylase isozymes with malrooligosaccharide substrates
INVENTOR(S): Ito, Hiroshi; Ogawa, Zensuke; Oda, Nobuhiro; Sato, Shigeru
PATENT ASSIGNEE(S): Kurita Water Industries, Ltd., Japan

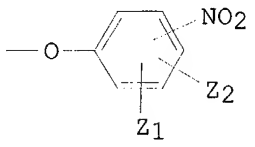
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01098498	A2	19890417	JP 1987-256693	19871012

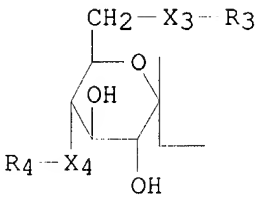
PRIORITY APPLN. INFO.: JP 1987-256693 19871012
OTHER SOURCE(S): MARPAT 112:94594
GI



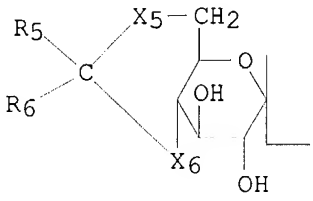
I



II



III



IV

AB A sample is reacted with a reagent containing oligosaccharides AGmB1 or CGnB2 (A = I; B1, B2 = II; C = III or IV; G = glucose m, n = 3-15; R1-R6 = H, lower alkyl, benzyl, etc.; X1-X6 = O or S; Z1, Z2 = H, halo, carbonyl) and glucosidase and/or glucoamylase, and the terminal glycoside of released **maltooligosaccharide** is quantitated for the differential determination of amylase isoenzymes. Thus, a blank containing fructomaltopentaoxide (G5-F) α-glucosidase, mannitol dehydrogenase, and NADH was measured spectrometrically and to this was added a test sample. The resultant **mixture** was again measured for G5-I determination Next, a blank containing 4,6-propylenefructomaltoheptaoxide (Pro-G7-F), glucoamylase, α-glucosidase, mannitol dehydrogenase, and NADH was measured spectrometrically and to this was added the test sample. The **mixt** . was again measured for Pro-G7-F determination Based on these results pancreatic
amylase and salivary amylase are determined

L15 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1989:422179 HCAPLUS
DOCUMENT NUMBER: 111:22179
TITLE: 6-Glucosyl **maltooligosaccharide derivatives**, their enzymic manufacture and use for α-amylase determination
INVENTOR(S): Yoshigi, Hisahiro; Yamamoto, Hisao; Kamimura, Minoru
PATENT ASSIGNEE(S): Sapporo Breweries Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63214193	A2	19880906	JP 1987-48386	19870303

PRIORITY APPLN. INFO.: JP 1987-48386 19870303
OTHER SOURCE(S): MARPAT 111:22179
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A method of manufacturing 6-glucosyl **maltooligosaccharide derivs.** [I; R = (un)substituted nitrophenol; n = 2-5] by reacting glucose/oligosaccharides/their aglycons, and **malto-oligosaccharide derivs.** [II, III; R, n as in I] with oligo-1,6-glucosidase is disclosed. I can be used in α-amylase (IV) determination Crystallized 2-Cl-4-nitrophenyl β-glucosylmaltopentaoside (V) 0.35 g was prepared by reacting a **mixture** of isomaltotriose 0.1 and 2-Cl-4-nitrophenyl β-maltopentaoside 1.97 g with oligo-1,6-glucosidase of Bacillus cereus at 30°, pH 6.9, for 24 h. In determination of IV, the optical absorbance using V is more stable than the control using 2-Cl-4-nitrophenyl-β-maltopentaoside, e.g. the absorbance of the former changed from 0.0794 at time 0 to 0.1381 at 60 min vs. 0.0798 and 0.5459, resp.

L15 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1989:71844 HCAPLUS
DOCUMENT NUMBER: 110:71844
TITLE: Differential assay of human α-amylase isozymes using **maltooligosaccharide derivatives**
INVENTOR(S): Ikenaka, Tokuji; Omichi, Kaoru
PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63039600	A2	19880220	JP 1986-181564	19860801
JP 07112440	B4	19951206		
EP 260414	A2	19880323	EP 1987-110937	19870728
EP 260414	A3	19880406		
EP 260414	B1	19920415		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AT 74970	E	19920515	AT 1987-110937	19870728
ES 2036549	T3	19930601	ES 1987-110937	19870728
US 5350678	A	19940927	US 1992-884252	19920508

PRIORITY APPLN. INFO.: JP 1986-181564 19860801
EP 1987-110937 19870728

US 1987-79744 19870730

AB A method for the differential determination of human α-amylase (I) isoenzymes using **maltooligosaccharide** (II) derivs. as substrates is disclosed. A solution containing p-nitrophenyl O-6-deoxy 6-[(2-pyridyl)amino]-α-D-glucopyranosyl-(1 → 4)-O-α-D-glucopyranosyl-(1 → 4)-O-α-D-glucopyranosyl-(1 → 4)-O-α-D-glucopyranosyl-(1 → 4)-α-D-glucopyranoside (III) and isomaltase and a 2nd solution containing III and α-glucosidase were prepared for differential assay of a **mixture** contgI isoenzymes (pancreatic and salivary). Based on the results of spectrochem. anal., the isoenzyme activities were calculated

L15 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1987:18962 HCAPLUS
DOCUMENT NUMBER: 106:18962
TITLE: High performance liquid chromatographic separation of **malto-oligosaccharides** as quinoxaline derivatives for measurement of **degree** of **polymerization**
AUTHOR(S): Takagi, Masanosuke; Daido, Yoshiyuki; Morita, Naofumi
CORPORATE SOURCE: Coll. Agric., Univ. Osaka Prefect., Sakai, 591, Japan
SOURCE: Analytical Sciences (1986), 2(3), 281-5
CODEN: ANSCEN; ISSN: 0910-6340
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Quinoxaline derivs. formed from **malto-oligosaccharides** (**maltose**, maltotriose, maltotetraose, maltopentaose, and maltohexaose) and O-phenylenediamine (OPD) under alkaline and heated conditions were studied for the measurement of the d.p. by HPLC anal. (2'S)-2-(2',3'-Dihydroxypropyl)-3-hydroxymethyl-quinoxaline (I) from reducing end residue and six quinoxalines from non-reducing end residue were obtained by the alkaline OPD method. The ratio of the peak area for I to 2-methylquinoxaline (II) was proportional to the d.p. of the **malto-oligosaccharides** tested. From 62-O-α-maltosyl maltotriose, which has both 1,4- and 1,6-linkages, a quinoxaline having a sugar moiety in its branch was separated with other smaller quinoxalines. From this chromatogram, some proportional relationships between the ratio of this quinoxaline to II and the average number of branched chain were estimated

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=> d que stat l19
L1             1 SEA FILE=REGISTRY ABB=ON  DEXTROSE/CN
L2             1 SEA FILE=REGISTRY ABB=ON  SORBITOL/CN
L3             2 SEA FILE=REGISTRY ABB=ON  MALTOSE/CN
L4             1 SEA FILE=REGISTRY ABB=ON  "DEXTROSE MONOHYDRATE"/CN
L5             2 SEA FILE=REGISTRY ABB=ON  L1 OR L4
L6           897 SEA FILE=HCAPLUS ABB=ON  ?SACCHAR?(W)?DERIV?(3A)?OLIGOSACCHARID
                 ?
L9          1823 SEA FILE=HCAPLUS ABB=ON  ?MALTO?(W)?OLIGOSACCH? OR ?MALTOOLIGOS
                 ACCH?
L10           90 SEA FILE=HCAPLUS ABB=ON  L6 AND L9
L11           52 SEA FILE=HCAPLUS ABB=ON  L10 AND (L5 OR L3 OR ?DEXTROSE? OR
                 ?MALTOSE?)
L12            1 SEA FILE=HCAPLUS ABB=ON  L11 AND (?HYDROGEN?(W)?STARCH?(W)?HYDR
                 OLYZ? OR L2 OR ?SORBITOL?)
L13           13 SEA FILE=HCAPLUS ABB=ON  L11 AND ?MIXT?
L14            1 SEA FILE=HCAPLUS ABB=ON  L11 AND ?POLYMERIZ?(3A)?DEGREE?
L15           14 SEA FILE=HCAPLUS ABB=ON  L12 OR L13 OR L14
L16            2 SEA L14
L17            5 SEA L15
L18            5 SEA L16 OR L17
L19            5 DUP REMOV L18 (0 DUPLICATES REMOVED)

=> d ibib abs l19 1-5

L19  ANSWER 1 OF 5  EMBASE  COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
     on STN
ACCESSION NUMBER:    2004074728  EMBASE
TITLE:               Enzyme kinetic properties of α-1,4-glucosidase in
                     Bacillus thuringiensis.
AUTHOR:              Rowe G.E.; Margaritis A.
CORPORATE SOURCE:    A. Margaritis, Dept. of Chem. and Biochem. Eng., Faculty of
                     Engineering, University of Western Ontario, London, Ont.
                     N6A 5B9, Canada. amarg@uwo.ca
SOURCE:              Biochemical Engineering Journal, (2004) 17/2 (121-128).
                     Refs: 30
                     ISSN: 1369-703X  CODEN: BEJOFV
COUNTRY:             Netherlands
DOCUMENT TYPE:       Journal; Article
FILE SEGMENT:        004     Microbiology
LANGUAGE:            English
SUMMARY LANGUAGE:    English
AB   An intracellular α-1,4-glucosidase was induced by malto-
     oligosaccharides, and more weakly by maltose, during
     vegetative growth of Bacillus thuringiensis (Bt) subspecies kurstaki HD-1
     if initial glucose concentration was limited to about 2g/l. The enzyme had
     the following apparent Michaelis-Menten parameters with
     p-nitrophenyl-α-D-glucopyranoside (PNPG), maltose and
     malto-oligosaccharides (average degree of
     polymerization 3.3) as substrates, respectively: V(max)=150, 260
     and 200nmol/(mgbiomass)/min; K(M)=0.37, 14 and 4.3mM. Since PNPG also
     acted as an effector, activating or inhibiting at low and high
     concentrations, respectively, data with this substrate appeared to be
     better fit by a two-site enzyme model. Acarbose potently inhibited the
     enzyme, especially with natural carbohydrate substrates. Maltose
     hydrolysis was competitively inhibited, while PNPG and malto-
     oligosaccharides exhibited a mixed form of inhibition. The
     properties of the enzyme are consistent with those of a partially
     characterized α-glucosidase previously described in Bacillus cereus.
     Its induction and activity patterns indicate that this enzyme processes
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malto-oligosaccharides derived from starch by the combined action of the known amylase and debranching enzymes, and provide an explanation for the apparent absence of glucoamylase activity in these species. .COPYRGT. 2003 Elsevier B.V. All rights reserved.

L19 ANSWER 2 OF 5 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2004-082469 [08] WPIDS
DOC. NO. CPI: C2004-033983
TITLE: **Saccharide-derivatized oligosaccharide mixture** useful as low-calorie bulking agents, comprises extrusion sufficient heat and work, imparted to **mixture** of **malto-oligosaccharides** and saccharide.
DERWENT CLASS: D13 D17 E13
INVENTOR(S): ANTRIM, R L; BARRESI, F W; MCPHERSON, R; WANG, J; MCPHERSON, R E
PATENT ASSIGNEE(S): (GRAI) GRAIN PROCESSING CORP
COUNTRY COUNT: 104
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2004000860	A2	20031231	(200408)*	EN	30

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

US 2004053886 A1 20040318 (200421)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004000860	A2	WO 2003-US19810	20030623
US 2004053886	A1 Provisional	US 2002-390570P	20020621
		US 2003-601912	20030623

PRIORITY APPLN. INFO: US 2002-390570P 20020621; US 2003-601912 20030623
AN 2004-082469 [08] WPIDS
AB WO2004000860 A UPAB: 20040202
NOVELTY - A **saccharide-derivatized oligosaccharide mixture** comprises extrusion reaction of saccharide product having average **degree** of **polymerization** of 1-4 with **mixture** of **malto-oligosaccharides**, where extrusion sufficient heat and work are imparted to the **mixture** of **malto-oligosaccharides** and the saccharide to derivatize the **malto oligosaccharide** with the saccharide.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) process of preparing a **mixture** of **saccharide-derivatized oligosaccharides**, which involves providing a saccharide product having an average **degree** of **polymerization** of 1-4, providing **mixture** of

malto-oligosaccharides in which at least a portion of the **malto-oligosaccharides** in the **mixture** have **degree** of **polymerization** greater than 5 and derivatizing the **mixture** of **malto-oligosaccharides** with the saccharide product to form a **mixture** of **saccharide-derivatized oligosaccharides** by extruding a blend of the **mixture** of **malto-oligosaccharides** and the saccharide product under extrusion conditions sufficient to form **mixture** of **saccharide derivatized oligosaccharides**;

(2) product obtained by the process of preparing a **mixture** of **saccharide-derivatized oligosaccharides**; and

(3) process of preparing a **saccharide derivatized oligosaccharide**, which involves providing an oligosaccharide having **degree** of **polymerization** of at least 5, selecting an amount of saccharide product effective to derivatize the oligosaccharides through extrusion, the amount being sufficient to prevent significant charring of the derivatized product but insufficient to yield liquid product upon extrusion and extruding a **mixture** of the oligosaccharide and the saccharide to derivatize the oligosaccharides.

USE - As low-calorie bulking agents and slow energy release products.

ADVANTAGE - The **saccharide-derivatized oligosaccharide mixture** are low in digestibility and effectively used as bulking agents, for controlled energy release products and for other purposes.

Dwg.0/0

L19 ANSWER 3 OF 5 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 97155998 EMBASE
DOCUMENT NUMBER: 1997155998
TITLE: Oligosaccharide characterization and quantitation using 1-phenyl-3- methyl-5-pyrazolone derivatization and matrix-assisted laser desorption/ionization time-of-flight mass spectrometry.
AUTHOR: Pitt J.J.; Gorman J.J.
CORPORATE SOURCE: J.J. Gorman, Biomolecular Research Institute, 343 Royal Parade, Parkville, Vic. 3052, Australia. jeffg@mel.dbe.csiro.au
SOURCE: Analytical Biochemistry, (1997) 248/1 (63-75). Refs: 34
ISSN: 0003-2697 CODEN: ANBCA2
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The 1-phenyl-3-methyl-5-pyrazolone (PMP) derivatives of monosaccharides, **maltooligosaccharides**, and oligosaccharides enzymatically released from asparagine-linked sites in ribonuclease B and fetuin have been investigated using matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF-MS). Use of the matrix 2,6-dihydroxyacetophenone containing diammonium hydrogen citrate (DHAP/DAHC) resulted in predominance of protonated over sodiated pseudomolecular ions of PMP-derivatized oligosaccharides. By comparison, the matrices α-cyano-4-hydroxycinnamic acid and 2,5-dihydroxybenzoic acid resulted in predominantly sodiated pseudomolecular ions. In addition, tendencies for fragmentation of PMP- **oligosaccharide derivatives** were significantly lower with DHAP/DAHC which enabled

meaningful data to be obtained in reflector mode, even for samples with high excipient levels. The relative magnitude of the ion signals for PMP-derivatized **maltooligosaccharides** and ribonuclease B oligosaccharides correlated well with the oligomer distribution apparent by HPLC. PMP- maltohexose was used as an internal standard to quantitate PMP- oligosaccharides from ribonuclease B and asialofetuin in crude derivatization **mixtures**. A linear relationship was observed between the ratio of the intensities of pseudomolecular ions and the amount of glycoprotein derivatized. The limit of detection for the major oligosaccharide of each protein was reached with ca. 3 μg of glycoprotein but may be further enhanced by optimization of sample handling. PMP derivatives of sialylated fetuin oligosaccharides were readily detected as protonated pseudomolecular ions by linear mode analyses. By comparison, reflector mode analyses revealed substantially reduced magnitudes of protonated pseudomolecular ions and considerable post-source fragmentation of sialic acid residues. The PMP derivatives of fetuin oligosaccharides were also amenable to exoglycosidase treatment as shown by the mass shifts found upon treatment with sialidase.

L19 ANSWER 4 OF 5 MEDLINE on STN
ACCESSION NUMBER: 96039609 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8556147
TITLE: Separation and detection of 4-hexadecylaniline **maltooligosaccharide derivatives** with packed capillary liquid chromatography-frit fast atom bombardment-mass spectrometry.
AUTHOR: Johansson L; Karlsson H; Karlsson K A
CORPORATE SOURCE: Department of Medical Biochemistry, University of Goteborg, Sweden.
SOURCE: Journal of chromatography. A, (1995 Sep 29) 712 (1) 149-54. Journal code: 9318488.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199602
ENTRY DATE: Entered STN: 19960312
Last Updated on STN: 19960312
Entered Medline: 19960227

AB A LC-MS method is under development for the separation and detection of **mixtures** of native glycolipids and of **oligosaccharide derivatives**. The LC system is based on slurry-packed capillary columns. Frit fast atom bombardment (frit-FAB) is used as the LC-MS interface and ionisation technique and the column is connected to the frit via a 50 microns I.D. fused-silica capillary liner. Post column addition of matrix is achieved using a 50 microns I.D. fused-silica capillary liner with 2.5% (v/v) matrix solution. The two liners are joined through a septum and end side by side against the frit. The detection limit was found to be less than 1 pmole in the negative ion mode. A **mixture** of tetra to deca **maltooligosaccharides** reductively aminated with 4-hexadecylaniline (M4-10-HDA) was separated on a straight phase silica column using gradient elution.

L19 ANSWER 5 OF 5 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 2000-044589 JAPIO
TITLE: **MALTOOLIGOSACCHARIDE DERIVATIVE** AND ITS USE
INVENTOR: UCHIDA RIICHIRO; NASU AYAKO; IWAI YUKIHIKO; SOMEYA TAKAO; TOBE KOUICHIROU
PATENT ASSIGNEE(S): KIKKOMAN CORP

PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2000044589	A	20000215	Heisei	C07H015-04

APPLICATION INFORMATION
STN FORMAT: JP 1998-219220 19980803
ORIGINAL: JP10219220 Heisei
PRIORITY APPLN. INFO.: JP 1998-219220 19980803
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000

AN 2000-044589 JAPIO

AB PROBLEM TO BE SOLVED: To obtain the subject compound exhibiting excellent α-amylase inhibitory activity without any side effect such as diarrhea, and useful as a preventive/therapeutic agent by binding a specific polyhydroxy nitrogen-containing compound to glucose with the reduced terminal.
SOLUTION: This compound (hydrate or salt) is shown by formula I [A is a group of formula II (X is N3 or NH2; Y is CH2OH or COOH), formula III or formula IV; (n) is 1-6], e.g. O-α-D-glucopyranosyl-(1→4)-6-amino-6-deoxy-D- **sorbitol**. The illustrated compound is obtained by reducing 61-azido-61- **deoxymaltose** with sodium borohydride in an N,N-dimethylformamide solvent.